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THE JOURNAL OF PHILOSOPHY

IS THERE A PROBLEM OF INDUCTION?[1]

THE problem of induction, as it is usually understood, concerns all our beliefs about matters of fact which go beyond our experience or observation, whether these beliefs are about past events, unobserved present events, or events in the future. It concerns all those cases where on the basis of observations now made, or remembered to have been made, one concludes that events or things which are not now observed have some specified character. For purposes of simplicity it seems advisable in this paper to restrict the consideration of the problem to just one of its temporal phases, namely, to beliefs concerning the future. As so restricted the problem still includes the question of the validity of scientific laws, since they are all statements about the future, as well as about the present and the past, which is the aspect of induction which has always appeared to philosophers as most challenging and fundamental. It is assumed that if the philosophical questions raised concerning induction can be disposed of in the case of beliefs about the future, the same disposition will apply, with little alteration, to questions about induction as a whole.[2]

I

The central question concerning inductive procedures in their reference to the future is whether they are capable at all of yielding genuine knowledge about future events. Those who find some special problem in induction, based upon some general inadequacy in inductive methods as a whole, answer that these methods do not and can not produce such results. Now if someone is sure that, no matter how careful the employment of inductive procedures may be, they yet can never give us knowledge of the future, he must have some idea of what it would be like to know the future even though this knowledge is, as he believes, induc-

[1] Read at the meeting of the Western Division of the American Philosophical Association, University of Wisconsin, April 24, 1942.

[2] For much of the stimulation to draw the conclusions expressed in this paper I am indebted to my colleagues Professors A. E. Murphy and Max Black; the conclusions are of course entirely my own responsibility.

tively unattainable. Of those philosophers, therefore, who say that we do not really know statements about the future it is legitimate and valuable to ask what, according to them, it would be like to know such statements. What kind of knowledge have they in mind which according to them is desirable but unattainable through inductive methods? What does it mean really to know the future?

In the case of some refined philosophical doubts, as John Wisdom has pointed out in his paper on "Philosophical Perplexity,"[3] it is impossible to answer such direct fundamental questions; and this impossibility, this inability to describe at all what it would be like really to know what is in question eloquently testifies that although the verbal forms are closely similar to those commonly employed in expressing doubt or indecision, they do not in these cases express a legitimate doubt. In the case of induction, however, the matter is not so simple. Here the person expressing what seems to him a doubt can give some kind of answer to the question of what it would be like really to know statements about the future. To know such statements really, he may very well reply, would be to know such statements with the certainty with which we know the statements of mathematics and logic. These latter fields positively exemplify genuine, certain knowledge. The inadequacy of our inductive beliefs about the future, as revealed in comparison with these more perfect forms of knowledge, show how far from genuine knowledge they are, how widely they are open to doubt.

An alternative or additional answer which may be given to this question by one expressing skepticism concerning inductive procedures would refer for examples of genuine knowledge to the data of immediate experience, contrasting the immediate certainties of these with the mediacy of inductive conclusions. That it is the comparison of inductive conclusions with the statements of mathematics and logic, on the one hand, and with the data of immediate experience, on the other, which is largely responsible for the philosophical doubts concerning induction, can be seen not only in the expressions of our contemporaries, as Margaret Macdonald has shown,[4] but also, and even more clearly, in a historical examination of the appearance of these doubts in modern philosophy. We can not now perceive what is going to happen in the future, at least in the sense in which we perceive what is

[3] *Proc. Arist. Soc.*, N.S., Vol. XXXVII (1937), pp. 71–88.

[4] *Arist. Soc.*, Supp. Vol. XVI (1937), pp. 20–35. This same point has been made more recently by Norman Malcolm in "Certainty and Empirical Statements," *Mind*, N.S., Vol. LI (1942), pp. 18–46.

happening in our present experience. To the early rationalist philosophers this appeared to be no great difficulty, since they believed that discovery of the proper method would make it possible to demonstrate statements about the future in the way that the statements of mathematics and logic are demonstrated. Although this hope did not long persist, being dissipated considerably by the time of Locke and Leibniz, those who held it believed that the criteria for the use of "know," or as they would have said, the criteria for genuine knowledge in all fields, were the same as those used in logic and the rapidly developing disciplines of mathematics. The empiricists were sufficiently in agreement with the rationalists to follow them in this matter, but they soon came to realize what Hume established so convincingly, that all causal laws, in short all the laws of nature, do not and can not satisfy the rationalist criteria. They all can be denied without self-contradiction. It is the conjunction of this discovery with the rationalist criteria for knowledge which, in the main, produced the skepticism which seemed to arise from Hume's examination of the causal relation. The only kind of knowledge recognized as genuine was either direct perceptual knowledge or demonstrative knowledge based on the necessity of avoiding contradiction. The laws of nature, and indeed all statements about the future, fall in neither of these classes. Therefore none of these things can be known.

While the considerations just mentioned can well account for the skepticism expressed by some philosophers concerning induction, they fortunately do not justify it. It is entirely possible to admit all the evidence adduced by these skeptical philosophers, and to understand how that evidence has led them to express what appears to them as legitimate doubt, without admitting that the doubt is as sound as they believe. It may be granted willingly that one can not perceive future events in the way that he perceives his present sense-data. It may be granted also, and even insisted upon, since there are still philosophers to be convinced on this point, that it is impossible to demonstrate statements about the future in the way in which it is possible to demonstrate a statement of mathematics or logic. Now quite clearly if the word "know" is to be restricted to immediately perceived events and logical demonstrations, then one can not be properly said to know any statement about the future. But the sting of this conclusion is removed when one realizes that in this argument and conclusion the word "know" is used in a very special and unusual sense. If someone has reasons for wishing to restrict the word "cold" to temperatures below —50° F., then it clearly fol-

lows that in his language the weather in the United States is seldom cold, or, as he might be tempted sometimes to put it, that it is seldom *really* cold. And if he were met by an objection from someone using this word in a more ordinary way and who consequently insisted that temperatures of as low as + 10° F., frequently found in the United States, are really cold, it would be obvious that these people are disputing about the use or definition of a word and not about actual temperatures or states of affairs in the United States. Though not so obviously, indeed in a much more complicated and perplexing way, this dispute over whether we really know any statements about the future is at bottom a dispute between those who wish and those who do not wish to restrict the use of "know" and other similar words in the above described ways. It does not of course make the slightest difference in the reliability of our inductive beliefs concerning the future whether we call them "knowledge," or "belief," or even "opinion." Whether we should continue to call them knowledge or not is a matter, like all other questions of linguistic usage, to be decided upon the basis of the relative convenience or usefulness of the alternative usages proposed. Unfortunately, however, statements which are legitimate only when interpreted in a very unusual way have a pernicious tendency to pass under their more ordinary interpretation. And it is apparently due to this that the statement that we do not know inductive conclusions about the future, though entirely legitimate when the word "know" is employed in the extraordinary sense noted above, has come to impose upon some philosophers, those who state it as well as those who hear it stated, as a statement about knowing and not knowing in a more ordinary sense of these terms, and hence as an expression of legitimate skepticism concerning inductive beliefs. Such is the origin of that peculiarly insoluble and tantalizing and wholly gratuitous pseudo-problem, the so-called Problem of Induction.

II

How this illegitimate skepticism and this pseudo-problem are the products of linguistic confusion may better be understood by returning to the original statement that we do not know, or do not *really* know, statements about the future. Suppose a philosopher has been rightly convinced, as described above, that we can not perceive directly, nor can we logically demonstrate, what is going to happen in the future. And suppose further that this philosopher resolves that no matter what course others may take, he is going to use the word "know" just for the perceptions of im-

mediate experience and the demonstrations of logic and mathematics, and that hence, whatever their status, inductive conclusions can not literally be called knowledge. Very well. This philosopher is proposing, at least for himself, a radical alteration in the use of the word "know," its synonyms and their derivatives. In evaluating this proposal, as has been indicated, it is necessary to inquire what consequences it involves, how much and in what respects usage would be changed if it were adopted, and whether the new usage would be convenient or inconvenient, useful or not.

One very important consequence which the proposal involves, and which is only sometimes seen by its advocates, is that a consistent adoption of it requires that the word "know," and of course the other related ones, can not be applied to any statement of fact whatever. The only statement which we should properly be said to know in the new usage would be the statements of mathematics and logic. Inductive conclusions about the present and past, as well as those about the future, may not be termed knowledge, for they do not fall in the two restricted classes of direct perception and demonstration. And although the immediate data of experience have been admitted into the class of knowledge, it can be shown that this class does not include also *statements* about these data. For all statements about these data, even statements which are intended to be just descriptions of the data themselves, are also by the very conditions of the use of terms, statements about other things not immediately perceived; and this latter aspect of the affirmation has been strictly excluded from the class termed knowledge. If I say only, referring to my present immediate experience, "This is a yellow patch," I am stating, among other things, that there is some similarity between this patch and other colored patches which I have in the past perceived; and this similarity is not something immediately given and perceived as the color of the patch is given and perceived. The assertion of it, therefore, is a statement clearly not embraced in the restricted definition of knowledge, but one which can probably be defended and established, should any question arise concerning its correctness, only by the inductive methods already excluded from the class of things yielding strictly defined knowledge.

The philosopher proposing this alteration in the use of "know" may be prepared to accept these consequences. The restriction may be more confining than he at first realized, involving as a consequence that no one can be properly said to know any statement of fact, but he may nevertheless be willing to stand by his previous definition. But consider for a moment two of the phases which were just used in attempting to describe accurately the

consequences in use of this definition. It was said that inductive methods were "already excluded from the class of things yielding strictly defined knowledge," and, also, that in the usage proposed "no one can be properly said to know any statement of fact." Notice how similar these phrases are to phrases ordinarily employed to express genuine doubt and skepticism, and notice how easily they slide over into statements even more similar. How easy it would be to say, instead of "excluded from the class yielding strictly defined knowledge," "excluded from the class yielding *genuine* knowledge"; or instead of "no one can be properly said to know any statement of fact" to say "no one can *really* know any statement of fact." In a sense these latter phrases are entirely legitimate, so long as one is clear that what he means is that this or that kind of method, or statement, does not fall under a certain definition. But it is difficult to remain clear on this point when the expressions are so similar in form to expressions of a very different kind, and where they constantly mislead one by virtue of their similarity into thinking that he is making a very different statement from that which he started out to make, and from that which is justified by his premises.

For if one says that we do not really know statements about the future, or that such statements do not contain genuine knowledge, meaning by that simply that such statements do not fall in the class defined as containing only the data of immediate experience and the demonstrations of logic and mathematics, his statement, though true, is apt to be very misleading. For this is not what these words ordinarily mean. The point of his statement, which is that there is a genuine distinction between the methods used in establishing a belief about the future and those used in establishing some other kinds of data and belief, is presented in linguistic forms which are usually employed to express a distinction between beliefs which are *well*-established and those which are not, i.e., between what we know and what we do not know, not in the above specially defined sense of "know," but in the more normal sense of having well-grounded and true belief. Because the use of "know" or "knowledge" in either of these two statements is a highly unusual one, there is a constant tendency for them to be interpreted in their more normal senses; and the effect upon the statements is thus, unless they are constantly circumscribed, that as they sound exactly like ordinary expressions of doubt, so they come to be interpreted, almost inevitably, as expressing a doubt concerning the adequacy of all our knowledge, or rather, all our beliefs, about the future. Compare, for example, the two statements, "We don't really know how many

German soldiers are in Libya," and, "We don't really know statements about the future." Of course the former statement, and countless like it, are expressions of genuine doubt, or gaps in our knowledge, as the latter term is commonly used. Affected by the great similarity of form one reacts also to the latter statement with a feeling of doubt and uneasiness altogether unwarranted by the state of affairs. "So we don't really know any statement about the future? Then all such statements, all scientific laws, are open to doubt." There is, then, some general problem of justifying all these inductive beliefs. Since the inductive methods alone do not give genuine knowledge, some further support must be found for our beliefs about the future which will rescue them from their dubious state. A Principle of the Uniformity of Nature must be established, or a transcendental method of proof devised in order to ensure the validity of the causal category for all possible experience. Somehow the future must be made safe for inductive prediction.

All the uneasiness, the pseudo-skepticism and the pseudo-problem of induction, would never appear if it were possible to keep clear that "know" in the statement that we do not know statements about the future is employed in a very special sense, not at all its ordinary one. Unless it is employed in a special sense the statement is outrageously false, for in the ordinary sense of "know" we do of course know countless things about the future. When "know" is employed in the special sense described above, the statement that we do not know statements about the future is undeniable, but also it involves no doubt or skepticism whatever. It is just when the statement has been established in its extraordinary sense, and by the tricks of language comes to be employed and affirmed in a more ordinary sense, without the appreciation that with the shift of meaning all substantiation has disappeared, that it appears to be a convincing expression of skepticism. Then it is that some philosophers begin to think and say, in spite of themselves, that perhaps after all the future may not be like the present and the past, that the general Order of Nature, whatever that is, may change, bringing down around our ears our world and our science.

III

There are many more things to be said, and said in greater and more convincing detail, concerning the causes and cure of the Problem of Induction than has been possible in this brief paper. What has been said concerning the genesis of this false problem in linguistic confusion has been prepared with the intention of help-

ing those afflicted with the problem by enabling them to perceive that their difficulty is a linguistic one, and not one of our inability to know any facts, a difficulty, that is, about how to speak about inductive beliefs, and not one, though it appears to be, of the over-all insecurity of these beliefs. Yet it is possible that the statement of the position is so compressed and the arguments so abbreviated that they are more likely to irritate than persuade and help anyone genuinely puzzled by this problem. The statement that we do not know statements about the future has been assayed as valid only when the word "know" is defined in a very unusual and restricted way. Why there should be people with such strong, and in the end misleading, preferences in the definition of this word has undoubtedly not been made sufficiently clear. Although the outlines of the explanation, in terms of centuries of rationalist and intuitionist prejudice, accumulated and congealed before the inductive methods of modern science had begun to show their character and their power, seem substantially correct, a convincing proof of their correctness requires a much fuller account than could be given here of the Problem of Induction both as it arose in modern philosophy and as it is now stated by contemporaries who find the problem compelling and have tried to solve it. Finally there is need for a detailed treatment and effective disposition of that phase of the problem which inevitably appears in the form of the questions whether the future will be like the past, whether Nature is after all uniform, and whether this must not be established in some non-inductive manner before the conclusions of any inductive procedure can be adopted as a reasonable belief. This is one phase of the Problem of Induction which even to its most confirmed addicts must sometimes seem suspicious and false, and it is one which most readily and completely yields to the kind of resolving analysis which has here been presented. It is impossible to begin here to show how this specific form of the pseudo-skepticism can be diagnosed and removed, but in closing it may be valuable to suggest very briefly what, when the analysis has been performed, the positive, correct conclusions about the matter seem to be.

We do know statements about the future. Not only is it true that we know such statements in the ordinary sense of "know"; we also know them in the only sense in which it is appropriate, in which at bottom it is meaningful at all, to speak of knowing the future or knowing statements about it. What the arguments of the skeptics prove is not only that we do not know statements about the future in either of the senses to which the term "know" is restricted by them, but further that it is literally senseless and

contradictory to speak of knowing them in either of these two ways. For future events, being by definition ones which have not yet occurred, can not by that very condition be perceived like sense-data; and logically demonstrable sentences, being by definition tautologous or analytic, by that condition make no assertions about any events, whether past, present, or future. Nor does knowing statements about the future by inductive methods involve any over-all assumption about how the future will be like the present and past, about the so-called Uniformity of Nature. To say that inductive conclusions are uncertain because we do not know whether the future will be like the present and past simply begs the whole question. The progress of science is in good part progress in discovering just how much similarity with the present and past can be expected in the future. Every day, as scientists extend their inductive procedures further and further, we learn more and more about the similarity which the future will have with the present and past. This slow, step by step process can not be circumvented or cut short, as the history of philosophy and science should show by now, by loose talk concerning the uniformity of nature or by some transcendental deduction of the categories of all possible experience. It can not be denied that many of the statements of science and everyday life, scientific laws and predictions about the future, are not as well-founded as could be desired. But in so far as they are scientifically or inductively established at all, they have the only kind of establishment which they can get, the only kind of which it is even meaningful to speak, and, fortunately, and this is no mean consideration, the only kind that for the practical purposes of life they seem to need.

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PARALOGISMS OF THE FREE-WILL PROBLEM[1]

AN apology is needed for bringing up once more the problem of the freedom of the will, since Schlick considers it "one of the greatest scandals of philosophy that again and again so much paper and printer's ink is devoted to the matter,"[2] and Jodl, who feels that the problem has been disposed of scientifically, laments that nevertheless "year after year a multitude of writings appear which are concerned either with announcing as new truths errors and

[1] Read in part at the Forty-third Annual Meeting of the Western Division of the American Philosophical Association, University of Wisconsin, April, 1942.

[2] *Problems of Ethics*, translated by D. Rynin, 1939, p. 143.

fallacies which were corrected long ago, or else with carefully putting to death once more these dead, which have come to life again."[3]

The problem rests on the presupposition that the freedom required by moral responsibility entails an absence of predetermination of the will, a supposition whose falsity has been demonstrated many times.[4] What concerns us now is not to repeat these arguments but to consider why the problem, which they should have eliminated, keeps rising to haunt us instead of reposing peacefully in its grave.

The persistence of the problem can hardly be explained by the mere confusion of words to which it is attributed by Schlick. Rather it seems to be due to two paralogisms, which give to the proposition "Freedom entails non-predetermination of the will" an illusory appearance of obviousness. One may say of this illusion, as Kant does of what he calls "transcendental illusion," that it "does not cease even after it has been detected and its invalidity clearly revealed."[5] It may accordingly be considered a *Scheinproblem* in the Kantian sense of *"Schein"* (illusion), although it is not one in the logical positivist sense (pseudo-problem), since "I am free" and "My will is predetermined" are not pseudo-propositions.

The argument that causal determinism denies freedom may be put briefly as follows. If all events are causally determined, then any event either belongs to the nexus or does not belong to it. If it belongs to the nexus, it is necessary; and if it does not belong to the nexus, it is impossible. Therefore any event is either necessary or impossible. If it is necessary, I can not prevent it, and if it is impossible, I can not produce it. Therefore I either can not prevent or can not produce it. If I am free respecting any event, I can prevent it and I can produce it. Therefore, if all events are causally determined, I am not free respecting any.

This argument is a combination of three dilemmas, of which the first two contain paralogisms. The first dilemma argues that if all events are causally determined, any given event must be either

[3] *Z. f. Philos. u. philos. Kritik*, N.F. Bd. 93, p. 308. Translated from a quotation by Helmut Groos, *Die Konsequenzen und Inkonsequenzen des Determinismus*, 1931, p. 11.

[4] Cf. Jonathan Edwards, *Enquiry into Freedom of Will*, 1754; Jeremiah Day, *An Inquiry Respecting the Self-Determining Power of the Will*, 1838; J. M. E. McTaggart, *Some Dogmas of Religion*, 1906, Chap. V; G. S. Fullerton, *A System of Metaphysics*, 1914, Chap. XXXIII; Moritz Schlick, *op. cit.*, Chap. VII; Gardner Williams, "Free-Will and Determinism," this JOURNAL, Vol. XXXVIII (1941), pp. 701–712.

[5] *Critique of Pure Reason*, A 297. Translated by Norman Kemp Smith.

necessary or impossible. An appraisal of this requires an examination of the categories of possibility and necessity.

Necessity and impossibility are the extreme degrees of probability. To be necessary is to have a probability of 1. To be possible is to have a probability greater than 0.[6] Now the degree of probability that any proposition is true, and therefore that any event will occur, depends on the evidence and varies with it. One knower may affirm that a given event has a high probability, and a different knower, who is acquainted with different relevant data, may affirm that it has low probability, and both affirmations may be true. All probability-statements are elliptical unless they specify the evidence to which the degree of probability is relative. But when the evidence is indicated, the probability-statement is true or false absolutely, and its truth or falsity is independent of whether the event in question actually occurs.

> Thus, when in ordinary speech we name some opinion as probable without further qualification, the phrase is generally elliptical. We mean that it is probable when certain considerations, implicitly or explicitly present to our minds, are taken into account. . . . No proposition is itself either probable or improbable, just as no place can be intrinsically distant; and the probability of the same statement varies with the evidence, which is, as it were, its origin of reference.[7]

Eaton, who quotes the above statement from Keynes, adds:

> It follows that the same proposition may have different probabilities upon different evidence, and that even though a proposition may turn out to be false, our judgment that it is probable on a given body of evidence could have been correct.[8]

Professor Lewis calls attention to the same point, as follows:

> Concerning probability-judgments, it has been pointed out, first, that their validity does not require that what is judged probable should be true—not even that the particular generalization should be true of any specifiable proportion of actual cases. Second, the probability-judgment is relative to the pertinent knowledge of him who makes it; and this relativity is no bar to its validity. Third, this relativity of the probability-judgment to its premises means that its validity, in the particular instance, consists in a certain relation between the conclusion and its ground; and means also that if it is valid it is true, absolutely and eternally.[9]

It follows that no event is absolutely or intrinsically necessary or possible or impossible. On evidence sufficient to produce certain knowledge that an event will occur, its probability is 1, i.e., it is

[6] Cf. C. J. Ducasse in this JOURNAL, Vol. XXXVIII (1941), p. 394.
[7] J. M. Keynes, *A Treatise on Probability*, 1921, p. 7.
[8] R. M. Eaton, *General Logic*, 1931, pp. 490–491.
[9] C. I. Lewis, *Mind and the World-Order*, 1929, p. 346.

necessary. On evidence sufficient to produce certain knowledge that it will not occur, its probability is 0, i.e., it is impossible. On evidence that is insufficient to show whether it will occur or not, an event is merely possible, i.e., neither impossible nor necessary. Of course the same event can not be both necessary and impossible, since knowledge that it will occur is incompatible with knowledge that it will not occur; but relative to different bodies of evidence it may be both necessary and not necessary, or both possible and impossible. It follows that all things are possible to an ignorant mind (except what is self-contradictory), and that to an omniscient being there is a complete dichotomy of all events, dividing them into those which are necessary and those which are impossible.

Now the evidence on which the human mind bases its probability-judgments of future events requires the assumption of causal law. On the basis of a certain amount of empirical data, together with a particular causal law which past experience (assuming uniform causality in general) has endowed with a certain degree of probability, there is a certain probability that a given future event will occur. This probability obviously varies with the probability that the particular causal law will be maintained. Hence, for human knowledge, the future can be predicted with *more* certainty (a higher degree of probability) in a world of rigidly uniform causal sequence than in a world of causal indeterminacy. To transcend human limitations, if we could be given a deterministic world and a complete knowledge of its laws, plus a complete knowledge of all events in that world at a given time, we should have all the premises required to give all actual future events a probability of 1 (necessity) and all non-actual ones a probability of 0 (impossibility).

For an omniscient mind, however, that knows the future by some other means, the premise that all events are determined causally is not needed. For such a mind the occurrence of any actual event is necessary regardless of whether it is caused or uncaused. The connection between the necessity (or probability) of an event and its causation is merely incidental to our means of prediction. A causeless event is necessary upon knowledge (however acquired) that it will occur and not-necessary upon limited evidence. Predictability is distinct from predetermination, and causality from necessity.

We can not, therefore, infer that all events are either necessary or impossible from the premise that they are causally determined, as the first dilemma presumes to do. The question of causation has only a contingent relevance, depending on the mode of knowledge. It would be no less valid to argue: Any prospective event, be it

caused or uncaused, either will occur or will not occur. If it will occur, it is necessary; and if it will not occur, it is impossible, etc. The two arguments contain the same fallacy, and neither contains a fallacy not shared by the other. That a given event is either necessary or impossible can not be inferred from the *a priori* proposition that it either will or will not occur, and it can not be inferred from the proposition that it is causally determined to occur or not to occur. This is because it is incorrect to say of anything that it is necessary except in relation to premises which fully imply it, or that it is impossible except in relation to premises which imply its contradictory. Necessity and impossibility can not be affirmed of any specified occurrence *disjunctively*. Unless one can be affirmed categorically, both must give way to possibility. If the premises fail to show that it is necessary and fail to show that it is impossible, then it is possible only—*neither* necessary *nor* impossible. It is possible only unless the premises show, not merely that it must either occur or not occur (or that it must belong or not belong to the nexus), but *which*. This the hypothesis of causal determinism can not do.

Because of the ellipticity of probability-statements, we tend to suppose that what is true only in relation to omniscience is true absolutely. It is only for an omniscient knower that all actual events are necessary. For such a knower the categories of possibility, actuality, and necessity merge into one; whatever is possible is also actual and necessary. Such a knower would therefore have no use for the categories of possibility and probability, nor would he use the words "may," "might," "can," "could," "should," "would," or "if." He would not think in propositions containing null classes. Categories of this sort are, however, indispensable items in the cognitive equipment of those whose knowledge is limited.

Let us now look at the second dilemma. This may be stated in terms of causal determinism as follows: If an event belongs to the causal nexus, I can not prevent it; and if it does not belong to the nexus, I can not produce it. But it must either belong or not belong to the nexus. Therefore I either can not prevent it or can not produce it. Here again, the strength imparted to the argument by the causal hypothesis is illusory. Granting the hypothesis, to say that an event belongs to the nexus is equivalent to saying merely that it is actual. It is necessary relative to the premise that it belongs to the nexus because any event is necessary relative to the premise that it is actual, regardless of causation, by the principle that any proposition entails itself. The argument is no more valid in this form than if it were stated simply: If a given event

will occur, I can not prevent it; and if it will not occur, I can not produce it, etc.

Whichever way the dilemma is stated, it has only an illusory invincibility and can be taken by both horns. Let us take as a premise that a given event will occur. It will not matter whether its occurrence be the result of an unbreakable causal nexus linking it with this moment, or whether it be foreseen. In any case, it does *not* follow that I *can not* prevent it. It only follows that I *shall* not prevent it. For the categorical proposition, "I can prevent it," is equivalent to the implicative proposition, "I shall prevent it if and only if I choose to prevent it"—a proposition which may still be true since an implicative proposition may be true when both its components are false.

We have seen that judgments of possibility and probability may be true or false independently of the truth of what is judged possible or probable. By the same token, it is no bar to the truth of a proposition in categorical form that its subject be a null class, nor to that of one in implicative form that the "if" clause or both clauses be contrary to fact. (Even the omniscient knower would not deny their truth; he would simply refuse to bother with them.) For example, the proposition, "All trespassers on this property will be prosecuted," may be true although nobody trespasses and nobody is prosecuted. So also the propositions, "If anybody trespasses on this property, he will be prosecuted" and "If I trespass . . . then I . . ." These propositions may be true even if both clauses are false. This is, of course, independent of whether all events are determined causally.

Such propositions assert or imply the existence of all the circumstances requisite to the occurrence of the event referred to in the predicate or in the "then" clause with the exception of one, viz., a member of the subject class or the condition referred to in the "if" clause. The existence of this one circumstance is neither affirmed nor denied; hence the truth of the proposition does not depend on it.

Moral freedom is a state of affairs whose essential character may be stated in an "if . . . then" proposition of this sort. To be free in the sense required by morality is to be able to do a thing or not to do it as one chooses (or wills). Analyzed, this becomes: I am free with respect to a given act when it is the case that I shall do it if I choose to do it and I shall not do it if I choose not to do it. Here again, the "if" clause refers to an unasserted condition, whose actuality is not essential to the truth of the proposition as a whole, viz., that the agent wills, or chooses, to perform (or not to perform) the act in question. Of all the conditions necessary to

the performance of the act, my will to perform it is the only one whose actuality is not implied. If, being free to do something, I do not do it, my will to do it is the only unrealized condition of its occurrence. I am free to perform an act which I do not in fact perform even though my non-performance is causally determined, provided that my will is essential to the determination.

The class of all prospective events may be divided into the five following subdivisions: (*a*) those which I choose and which will occur, (*b*) those which I choose and which will not occur, (*c*) those which I refuse and which will occur, (*d*) those which I refuse and which will not occur, and (*e*) those which I neither choose nor refuse. Upon the premise that a given event falls in class (*b*) or class (*c*), my freedom respecting it is impossible. But relative to the premise that it falls in any of classes (*a*), (*d*), or (*e*), my freedom respecting it is possible. That it falls in (*a*) or (*d*) does not imply, however, that I am free necessarily, for freedom requires that the occurrence or non-occurrence of the event shall *depend* on the choice. If a chosen event occurs independently of the choice, we may say with Aristotle that I am in luck, but not that I am free, for if I had refused it, it would still have occurred.

Since all free acts depend on the agent's volition, it follows that *upon any set of premises which does not include the volition, a free act is possible but not necessary.* Now my future choices, or volitions, can not be included in any set of premises that is available to my knowledge. Hence relative to my knowledge, none of my future free acts is necessary. I must judge that these are possible only. If an omniscient seer judges otherwise, his judgment is true; but my judgment is true also. The necessity of my act is relative to his omniscience. Its mere possibility is relative to my limited knowledge. But my freedom is absolute.

Our habits of thought and speech are such that we take our possibility-probability judgments to be absolute when actually they are relative to the information available to us when we make the judgment. I accordingly falsely suppose that the possibility-status of my future free acts is absolute. But absolute possibility is a self-contradiction. I have therefore only a hazy notion of it and readily confuse it with causal indeterminacy. Realizing that the complete set of premises relative to which an event is necessary (or the complete set relative to which it is impossible) would be found in a complete description of all causes operating at any previous moment, together with the laws of causal sequence, on a deterministic hypothesis, but that on an indeterministic hypothesis no description confined to causes and causal laws would suffice, I readily see that this supposed absolute possibility (which is im-

possible in any case) is impossible if all events are causally determined, but I make the mistake of thinking that such possibility may be attributed to an event if it is causeless. Hence arises the illusion that freedom, which implies possibility in relation to the unavoidable ignorance of choice, implies something quite different, namely, an absence of predetermination.

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FREEDOM IN DETERMINISM

IN the controversy between free-willists and determinists three meanings of freedom, and resulting sources of confusion in discussions of it, may be distinguished: (1) indeterminism or objective chance; (2) free-will; and (3) self-determinism. The two last-named may or may not be equivalent. Four meanings of determinism also come to light: (1) necessity; (2) the determination of desire and will by causes antecedent to them; (3) coercions and compulsions exerted by environment upon an agent in opposition to its will; and (4) causal or scientific determinism.

We first examine the meanings of freedom and, in light of this analysis, follow with a statement of our own conception of it. We next briefly consider the meanings of determinism. Finally, we indicate the empirical distinction between freedom and determinism, and conclude with a statement of some of the more important implications of our definition of freedom.

(1) Is nature at least at times and places indeterminate? Dewey contends that "a world that is at points and times indeterminate enough to call out deliberation and evoke choice is a world in which will is free" because "deliberation and choice are determining factors." Yet even overlooking the obvious *petitio* contained in it, this statement affords no evidence that natural events themselves are indeterminate. For at most this but signifies, as Dewey himself at times admits, that cognitive inquiry succeeds only in transforming subjective uncertainty and hesitation into an equally subjective feeling of certainty and confidence as respects the outcome of some desired or projected course of action. Moreover, to affirm that deliberation and choice are determining factors is no evidence of indeterminism in *rerum natura;* at most this but shifts the locus of causal determinism to human deliberation and choice. Natural law is not abrogated when employed as means to human ends. Indeed, it is only in virtue of determinism in nature that deliberation and choice exert causal control over natural things and forces. Yet this but affirms that the course

of events may be controlled in such a way as to fulfill our desires and purposes. In short, cognitive inquiry is instrumental in supplanting ignorance and impotence with knowledge and control, the very success of which implies determinism, not indeterminism, in nature.

Nor does Heisenberg's "principle of indeterminacy" afford evidence of indeterminism in nature. Granted that, of a given number of radium atoms, we can predict what proportion of them will disintegrate within a specified time; granted that this type of prediction is purely statistical in reference and enables us to predict nothing as regards the time when any particular radium atom will disintegrate. Yet it would seem far more probable that our inability to predict the future behavior of a given atom is due, not to actual indeterminism in its behavior, but rather to our inability to specify its age, the physical *milieu* in which it exists, etc., or, in general, to our failure to devise experimental operations which isolate, measure, and control the course of its interactions with other things. This, however, is but confession of ignorance, not evidence of indeterminism, in the behavior of individual atoms and their constituents. And, it need scarcely be added, ignorance is evidence only of ignorance.

While there is no conclusive proof that nature is not at least at points and times indeterminate, and while some measure of faith must always sustain us in denial of indeterminacy, yet, that all things and events, both psychological and otherwise, have natural causes and natural effects conformable to invariant law, seems now to be so highly probable that the burden of proof rests upon him who would question it. If this be so, as we believe it to be, then freedom must be found in a world of things and events *all* of which are strictly determined and hence can not be identified with indeterminism or objective chance. It will be convenient to set forth in the next section more positive and conclusive evidence of this.

(2) The ascription of freedom to the will, or the identification of freedom with the causal agency exerted by desire and volition, likewise points to the truth of determinism. That these processes do occur, if only in the experience of conscious agents, is a fact. But as mere facts in isolation they are neither free nor determined. For both freedom and determinism are assertible only in terms of relations between things and events. Hence the question is not whether desires and volitions occur but whether, in their occurrence, they have natural causes and natural effects conformable to invariant law. That all "physical" events are thus describable is the basic postulate of natural science. That all

"psychological" events, desires and volitions included, are likewise both determined and determining agencies is the basic postulate of psychology as natural science and may now, we believe, be honored with the status of "warranted assertibility."

More specifically, any event, whether psychological or otherwise, may be viewed from any or all of three points of view: *retrospectively,* in relation to events that precede it; in *simultaneous occurrence* with other events; and *prospectively,* in relation to events that follow it. Hence the basic question is whether the relations of occurrence between or among events are *invariant* or *chance* in character.

(*a*) Viewed retrospectively, all events seem to have causes; indeed, experience discloses no events that are uncaused. The difficulty is not whether or no events have natural causes, it is the determination of what precisely their causes are. Observation and experiment alone can supply the answer. By observation we mean, not the mere parade of events before awareness, but "scientific" or highly refined and controlled observation, in which tested operations are employed in search for evidence in verification of some hypothesis. In this, *the one sense alone in which it is cognitively reliable,* observation does in fact disclose the specific causal antecedents of an ever increasing number of events, in consequence of which the hypothesis of indeterminism becomes increasingly less probable. It must be admitted that all who enter here leave certainty behind; the quest for certainty never ends in the domain of existence. Yet when we turn to events amenable to experimental manipulation and control, it is discovered that all such events have definite and determinate causes. Indeed, we believe that those who "argue" most vigorously against scientific determinism will be found actually to oppose, not determinism as such, but chiefly or only the ascription to certain events of causes which, in virtue of emotive, cultural, or other Idols of the Tribe, are felt to be repugnant. This is clearly evidenced in those who refuse to accept "material" causes in explanation of "spiritual" affairs.

(*b*) Simultaneous events are also discovered to be causally related in specific ways. Events are simultaneous when no temporal differences can be distinguished between them. When two simultaneous events or sets of events occur in such wise that the occurrence of either is always accompanied by the occurrence of the other, or when the occurrence of one is always accompanied by the occurrence of the other, we have grounds for inferring or at least suspecting causal relations between them. When, in addition, variations in one are observed to be accompanied by vari-

ations in the other, we have further and, we believe, more conclusive evidence of causal relations between them. While simultaneity in occurrence and concomitance in variations between events do not of themselves prove the existence of causal relations, much less distinguish which are causes and which effects—a distinction which can be made only by appeal to the body of invariant relations already independently established—they nevertheless constitute added evidence of the truth of determinism.

(*c*) Viewed prospectively, a given event or set of events seems always to be followed by another specific event or set of events. This seems always to be true of events when experimentally controlled; moreover, this is equally as true of psychological as of other events. With the rapid extension of experimental methods to an ever increasing number of events in all domains of existence, it becomes increasingly less probable that there occur in nature events whose effects are indeterminate. Here also no indeterminacy or objective chance is discovered; here also determinism would seem universally to reign. To repeat, the burden of proof falls upon him who would deny this.

Hence free-will, or freedom of desire and volition, must be consistent with determinism; indeed, as we shall see later, free-will is but a kind or special case of determinism.

(3) We come to the identification of freedom with self-determinism or self-determination. Self-determinism, however, possesses two meanings, and it is important that we distinguish between them. In its broader sense, it denotes the fact or belief that every event has effects such that the nature of the effect is "determined" by the nature of the cause. In this ubiquitous sense, it is highly probable that all events, psychological ones included, are self-determining. A variant of this view is the conception that all things act in accordance with their own nature. Yet empirically the "nature" of a thing is essentially the modes of its interaction with other things; to ascribe a behavioral trait to things in isolation is mystical, not empirical. The ascription of some behavioral trait to a thing as such would seem to be little more than a convenience of language.

Self-determinism possesses also a narrower meaning. It denotes the fact or belief that "will" is a dynamic agency operating as a cause in fulfillment of the desires and purposes of a self. It is not merely that volitional acts have natural effects conformable to invariant law, *but also that the effects be such as to constitute the ends willed.* It is in this sense that we would identify freedom with self-determinism, self-fulfillment, or free-will. This is the meaning of self-determinism exemplified in the views other-

wise as far apart as those of Kant, Dewey, and Urban. In this sense, self-determinism seems to be the least-common-denominator of empirical meaning assignable to the term "freedom" by those who have labored most valiantly in its defense.

Yet the self is not something which *has* desires and volitions, it *is* these processes. It is the efficacy of the will when viewed prospectively; it is desire and will in their self-fulfilling function. Thus Kant was near yet far from the truth; near, when he perceived that in their time, place, and character, all events are determined; near also when he ascribed causal efficacy to the rational will; far from the truth, however, when he tracked the rational will, together with the laws of moral behavior that spring from it, to a non-empirical self laid up in a noumenal realm where temporality does not intrude and scientific determinism does not corrupt. This "rescue" of freedom from determinism was dictated, we believe, by emotive and conventional, not rational, motives.

The meanings of determinism may now be dismissed with brief comment. One *caveat* alone needs be entered: Necessity is not determinism; rather it is irrelevant to both freedom and determinism. Two meanings of necessity may be discriminated, the *sense of compulsion,* and *logical implication.* The former is psychological, the latter logical, in character. Determinism is not the feeling of compulsion; it is an hypothesis to be tested by objective evidence. This evidence, we believe, points overwhelmingly to the truth of determinism. Nor is determinism to be confused with logical implication; implication is a purely formal relation between propositions and involves no necessary reference to material facts. As Hume showed, one event may lead us to *expect* another event; one event never *necessitates* or *implies* another event.

As regards the other meanings of determinism, they are all true, or at least are so highly probable as to be accepted as true. All things and events, psychological and otherwise, are the outcome of definite causes; indeed, they are both causes and effects. Indeed, as we have seen, all events amenable to scientific observation and experiment are such that the causal relations discovered between them are found always to be invariant in character. Hence scientific determinism is true, and, since this implies that form of determinism which "determines" only from behind, both of these determinisms are true. As respects the remaining meaning of determinism, a qualification must be made with regard to it. The identification of determinism with frustration of desire and impotence of will does not exclude freedom. For only in case *all*

desires were frustrated, *all* wills impotent, would freedom be an illusion. Yet desires and volitions are in fact neither wholly impotent nor wholly omnipotent; some desires and wills are frustrated while others are not. *Where they are fulfilled there is freedom; where they are frustrated or balked there is unfreedom.*

We return, in conclusion, to our definition of freedom. It but remains to specify the nature of it somewhat more fully and to indicate some of the implications that follow from it.

Freedom is a property of the will; we may, if we please, say that a conscious organism is free in the degree to which it fulfills its desires and volitions; it is free, i.e., *in the degree to which its acts fulfill what it wills.* Will is both determined and free. As a natural effect of prior causes it is wholly unfree and wholly determined; as a causal agent which has natural effects, at least some of which are desired or willed, it is *both* determined *and* free. If it were not a cause it would be wholly unfree. Yet always to have determinate effects does not make it free, for, if this alone were the case, then freedom would be the same as determinism. While freedom *is* determinism, it is something more. *Those wills are free that have just those determinate effects that are desired and willed.* This is the empirical meaning of freedom.

Thus it is that *there is freedom only in determinism;* freedom is but a special case or species of determinism. The greater is our knowledge of nature as determined, the greater is the efficacy of will in fulfillment of our desires and purposes, and hence the greater is our freedom. Indeed, without an abiding belief in and reliance upon nature as determined, however it be arrived at, will and choice would in all probability never lead to action. Determinism seems to be writ deep within the very marrow of man's thought, volition, and conduct; as Hume confessed, theoretical skepticism tends to evaporate when confronted with the exigencies of practical choice and action.

Freedom is thus after all a phenomenon of consciousness. Since so far as we know only conscious agents have desires and volitions, so far as we know only conscious agents are free. While all things and events are determined, a stone is unfree while a human will is at least at times and places free. This, we take it, is the kernel of empirical truth in the historic tendency to restrict freedom to conscious agents and specifically to attribute freedom to will alone.

Since freedom is but a special case of determinism, *there is no antinomy between freedom and determinism.* All human desires and volitions have both determinate causes and determinate effects; yet, though rigidly determined, some of them are free. Thus there is no issue *between* freedom and determinism. *The*

issue is solely between freedom and unfreedom, or, possibly, between determinism and indeterminism. But since indeterminism is highly improbable, there seems to remain only the question as to whether volitions are free or unfree. There appears to be nothing more. In the light of this, it would seem that the millions of words and gallons of ink expended in argumentation of "freedom *versus* determinism" is so much sound and fury in the void.

Hence it is a commonplace that freedom is a matter of degree. One agent is freer than another; the same agent is freer at one time than at another time. A volition is freer in one agent than in another; a volition is freer in the same agent at one time than at another time. An intelligent and resourceful man is freer than a stupid and unimaginative one. A man outside jail is freer than one confined therein; a man living in America is probably much freer than one living in Germany. A rich man is freer than a poor one; a citizen of a country is freer than an alien residing therein. An adult is freer than a babe; a man with legs is freer than one without them.

Freedom is not a "mental" escape-mechanism, Russell and others to the contrary notwithstanding. We may if we wish "call" this freedom, and as humans we indulge in a vast amount of it. Yet the frequency with which desire and will find satisfaction or fulfillment in imagination affirms not the degree of our freedom but the degree of our actual unfreedom. Indeed, desires that feed on fancied consummations, while they doubtless have natural causes and natural effects, and while all too often there is little else we can do, signify unfulfillment not fulfillment. Actual fulfillment is never found in escape from something, save, possibly, when the escape itself is desired and willed. Nor does freedom reduce to mere protest against bondage to external things and events; indeed, this is confession of unfreedom. Enslavement, either to forces external to the self or to some one or few of its own desires, again evidences not freedom but unfreedom. Freedom exists only when desire and will operate as forces in achievement of their own objects or ends. Negatively, this means the elimination or circumvention of obstacles that frustrate desire and obstruct will, as the history of man's long struggle to "free" himself from domination and oppression by others so eloquently attests.

Nor can freedom be identified with the feeling of perplexity and uncertainty incidental to indecision when some situation demanding action is viewed prospectively, nor even with the sense of indeterminateness resulting from ignorance of the causal nexus of events when considered apart from practical choice and action.

In truth these phenomena are signs of ignorance and temporary impotence and as such spell not freedom but unfreedom.

Finally, freedom is not found in renunciation of desire, the abnegation of will, the attainment of Nirvana. These are counsels of despair, confessions of unfreedom. While many desires are unattainable and many volitions impotent, and while practical wisdom may dictate the renunciation of many of these, yet the negation of desire and will attests not freedom but unfreedom. For desires and volitions are the source of both freedom and unfreedom; an agent whose desires and volitions were wholly impotent, or in whom desire and will were wholly absent, would be wholly unfree.

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BOOK REVIEW

World Hypotheses. A Study in Evidence. STEPHEN C. PEPPER. Berkeley and Los Angeles: University of California Press. 1942. xiii + 348 pp. $2.50.

This is a very interesting and unusual, if somewhat curious, book. It is unusual for a philosopher to attempt, as is done here, to study world hypotheses "as objects existing in the world, to examine them empirically as a zoologist studies species of animals, a psychologist varieties of perception, a mathematician geometrical systems" (p. 2); for to do this requires a self-abnegation with regard to taking sides difficult to achieve. Nevertheless Professor Pepper does appear to have succeeded. To this end, he begins his work with a demonstration that the attitudes of both the utter sceptic and the dogmatist are untenable, thus eliminating the extreme of unneutrality which would consist in rejecting all world hypotheses, and the other, and more usual, extreme of uncritical and exclusive acceptance of one. It is clear, therefore, that Professor Pepper studies world hypotheses as hypotheses, as systems of ideas claiming truth, not as mere essences without relevance to existence. Hence it is logical that he should be led to examine the kind of evidence world hypotheses may have, in terms of which they may be judged true or false. A description and appraisal of world hypotheses then follows, of which there have been—and seemingly can be only—six: the generating substance theory, animism, formism, mechanism, contextualism, and organicism. Each of these hypotheses is asserted to be the expression of a "root metaphor," so conceived as to cover the whole universe in its scope.

This notion of a root metaphor, by the way, reminds one of that fine, but now forgotten, book by Harold Hoeffding, *The Problems of Philosophy,* in which, borrowing from Goethe, the author introduces the notion of *Urphaenomen,* translated "type phenomenon," as the basis of a system of philosophy. Of the six, the first two hypotheses are summarily rejected as being glaringly inadequate when tested by the canons of evidence laid down in the chapter on Evidence and Corroboration, thus leaving four, of which all are declared to be independent—except for a certain affinity between formism and mechanism, on the one hand, and contextualism and organicism, on the other hand—and also (which is the curious element in the book) equally acceptable, though each tainted with a special defect of its own. Eclecticism is rejected as a possible method of synthesis of the four, on the ground that, being independent, they can not merge without violating the integrity and intelligibility of each.

Such, if I mistake not, is the general thesis of the book. In its development and attempted proof, Professor Pepper introduces many original distinctions and some new terms. Thus, for example, since he rejects self-evidence as an absolute criterion of truth (although giving to it some weight as evidence) and at the same time admits common sense as the starting point of philosophy, he calls the deliverances of common sense "dubitanda," and, on the other hand, well-grounded hypotheses, "danda." Two kinds of corroboration of evidence are distinguished, multiplicative and structural; the former consisting in the agreement of many minds as to what is a fact; the latter, the support given to one bit of evidence by another bit. This whole discussion is highly instructive and original; although personally I am not convinced by the fact that two eminent philosophers, Dewey and Price, describe the reality of a red tomato very differently, that an immediately certain something may not be found in a tomato; for I believe that one could show that even their descriptions are more in harmony than seems, owing to purely verbal differences. The common jibe against philosophy that it is only a dispute about words, has this amount of justification, that until philosophers reach some agreement concerning terminology, they will misunderstand one another and go on debating as if they disagreed, even when in fact they do not.

Equally informing are the accounts given of the four dominant world hypotheses. The expositions of formism and mechanism are crystal clear; the latter is almost exciting in the dramatic way in which the development of the older, discrete type into the newer,

consolidated type is described. It is unfortunate, however, that Mr. Pepper puts us off at the end of the exposition of formism with only a page of criticism, especially since he lays his finger deftly on its fatal weakness, when many pages would be required for an adequate treatment. The account of contextualism (eventism, temporalism) is perhaps the most intriguing part of the volume, but being in effect an original re-statement, making use of several novel terms, it also is far too brief, and one finishes the chapter with the feeling of a hungry man who has been shown a tempting menu, but denied his dinner. The chapter on organicism is very illuminating, owing chiefly to the vivid use of the evolution of astronomy as an illustration of the organic theory of truth and reality, but one gets the impression that, despite the author's insistence that all four hypotheses are equally plausible, he has less sympathy for it than for the others. May I add that I have a sneaking suspicion that he really prefers contextualism to any of them?

The many virtues of this book are, I believe, independent of its main theses, the root metaphor theory and the equal validity and exclusiveness of the four world hypotheses. For myself, I would not deny that philosophers use root metaphors, but I would deny that any known philosophy, not excepting mechanistic ones (even Pepper admits the presence of formism in mechanism), uses one metaphor only. That is not to say that all philosophies are eclectic in the sense that they merely piece together existing historical systems, although there are, to be sure, epigonic attempts of this sort, but that the sincere and original philosophical thinker, like any other, opens his eyes as wide as he can and therefore sees a variegated world, which he can describe adequately only by using many metaphors. There is formism and contextualism in the universe, even a semblance of mechanism, and, I should add, a basic, though abstract, organic unity. Even Pepper's list of root metaphors does not comprise all that have been employed and must be employed by philosophers; for example, the metaphor of the monad, based on the unity of consciousness or self, is not included, and can not be reduced to the others. A single metaphor no more suffices the philosopher than the poet. Consider the last two stanzas of Shelley's *Adonais:* in order to express the meaning, the following metaphors are used: light, smile, beauty, benediction, love, fire, and star. The conceded inadequacy of every one of Pepper's four would seem inevitably to lead to the use of the others as supplements; or must the philosopher perhaps seek some new, fifth metaphor that should supplant all the rest? And yet, if it

be true, as I think he is right in claiming, that each provides some knowledge of the world, must it not be retained in any final, or nearly final, picture?

P. S. Does any reader agree with the author of *World Hypotheses* that Berkeley was a mechanist?

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BOOK NOTES

Renaissance Studies in Honor of Hardin Craig. (*Philological Quarterly*, Vol. XX, Number 3, pp. 193–531.) Iowa City: University of Iowa. 1941.

This special issue of the *Philological Quarterly* contains a number of valuable articles on English and comparative literature of the Renaissance, dedicated to Hardin Craig on the twentieth anniversary of the periodical of which he was the founder. Several of the contributions are of interest to the student of the history of philosophy. B. L. Ullman ("Some Aspects of the Origin of Italian Humanism," pp. 211–223) presents some interesting details about the influence of France on early Italian humanism, but at the same time vigorously reasserts the originality of this movement against recent tendencies to minimize it. A. H. Gilbert ("Fortune in the Tragedies of Giraldi Cintio," pp. 224–235) examines Giraldi's conception of fortune in the light of Renaissance thought and literature. M. W. Bundy ("Fracastoro and the Imagination," pp. 236–249) analyzes the theory of imagination and phantasy developed in Fracastoro's dialogue *Turrius sive de intellectione* and concludes that it might have been used for a new system of literary and art criticism, although Fracastoro himself failed to do so in his own work on poetics. H. H. Hudson ("Current English Translations of the Praise of Folly," pp. 250–265) presents a close examination of the available English versions of Erasmus's famous work and thus justifies his intention to undertake a new translation. E. Casady ("The Neo-Platonic Ladder in Spenser's Amoretti," pp. 284–295) emphasizes the coincidences between some of Spenser's sonnets and the theory of love contained in Castiglione's *Cortegiano*. P. H. Kocher ("Backgrounds for Marlowe's Atheist Lecture," pp. 304–324) analyzes the arguments attributed to Marlowe in a memorandum of Richard Baines and concludes that Baines gives a fairly correct account of Marlowe's actual views. C. Camden ("The Mind's Construction in the Face," pp. 400–412) collects a number of interesting passages

from Elizabethan literature dealing with physiognomy. E. N. S. Thompson ("Richard Hooker among the Controversialists," pp. 454–464) analyzes Hooker's stand on the issues of the controversies of his day and also emphasizes his general principle of natural reason, making significant comparisons with Milton and with N. Culverwel.

P. O. K.

Teleology in the Philosophy of Joseph Butler and Abraham Tucker. WILLIAM GLEN HARRIS. (University of Pennsylvania, Ph.D. dissertation.) Philadelphia: Privately printed. xviii + 50 pp.

This study purports to be an analysis of the teleological viewpoints entertained by Butler and Tucker—teleology being understood as the branch of natural philosophy that has to do with ends or final causes.

Towards this end the author introduces us to the subject by presenting first a brief but perfunctory running account of the place of teleology from Anaxagoras to Kant. The body of the dissertation is devoted to an exposition of the views of both thinkers in which the outlooks of each, except for manner of expression, are fundamentally the same. The universe created by God instances His intentions. Man is spiritually destined to read as much of God's purposes as is necessary for his moral life. Man's good consists in the progressive realization and fulfillment of this aim. By studying nature and making use of his knowledge thereof, man can display justice, benevolence, and right conduct, etc. Thus, he is lifted beyond the material life of inexorable law, becomes responsible for the consequences of all his actions, and advances God's spiritual aims.

In the concluding part, the influence of Butler and Tucker is lightly mentioned.

The entire dissertation, I feel, would have greater value, first if the author had read more widely in the field of relevant literature and had acquainted himself with the work already done on this topic. He would have avoided much needless repetition. For instance, in regard to Butler, the bibliography makes no mention of such important works as Spooner, Ayer, Norton, *et al.* In the second place the value of the dissertation would have been enhanced if the author had more clearly defined and delimited the use of the term "teleology": (*a*) internally, in the writings of these men (namely: Is teleology of central or subordinate importance?); (*b*) externally: what further light upon the nature of teleology is afforded us by these two thinkers?; (*c*) historically,

what advance (if any) has been made upon the previous thinkers mentioned in the introduction? But as matters stand, the introductory chapter is a chronological statement made at random; it has no value in itself and no relevance to the body of the dissertation that follows.

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